Registration of germplasm

VL 858: A genetic stock for excellent chapatti quality

Wheat has different end product uses and the chapatti being most predominant in our country. Many indigenously developed varieties possess excellent chapatti making characteristics. Yet there is a need to develop elite genetic stocks for their use in breeding programs. A planned breeding programme has resulted in the selection of a unique novel and chiverse genotype VL 858 which has been registered as unique germplasm for excellent chapatti quality, by the Plant Germplasm Registration Committee of the Indian Council of Agricultural Research vide registration number INGR 07002 (IC 546940).

VL 858 was developed through selection from a cross OPATA/RAYON/KAUZ at Vivekananda Parvatiya Krishi Anusandhan Sansthan (VPKAS), Almora 263 601, Uttarakhand. It has excellent score (8.11 on 0 to 10 scale) under irrigated and very good (7.83 on 0 to 10 scale) under rainfed conditions for chapatti making quality tested at quality laboratory, Directorate of Wheat Research, Karnal. For evaluation of chapatti quality various parameters like water absorption, nature and colour of dough (before and after maturation), chapatti appearance, colour, aroma, taste, puffing height, pliability and loss of water (just after and after 4 hours of baking) were considered for scoring quality. The score of >8 is considered to be excellent.

In addition to excellent chapatti quality, VL 858 possesses high hectoliter weight (79.15 and 80.43 kg/hl), high carotene (4.6 & 4.1), iron (33.0 & 36.6), zinc (3.5 & 24.0) and manganese (57.4 & 29.7) ppm under irrigated and irrigated conditions, respectively. It is a spring wheat, having intermediate growth habit and green coleoptile colour. The average height of VL858 is 95-100 cm and it takes on an average 160-170 days to maturity. It has dull white colour ears producing ovoid shape amber grain and the thousand grain weight is 38.5g. VL858 possesses high degree of field resistance to yellow and brown rust.

Seed and pod colour mutants of urdbean

Urdbean (Blackgram) is the third important pulse crop and being grown in all most all the states of India. The idea of producing mutation artificially and using it for breeding purposes was clearly stated as early as 1901 by De Vries. Almost all the varieties of blackgram are generally of rough black seed with black pods. Four hundred pure, uniform, healthy and dry (9.5% moisture) seeds of cultivar Pant Urd-30 were treated with 60Co gamma rays (100, 200, 300 and 400 Gy doses), EMS (0.2, 0.4, 0.6 and 0.8%) and combination of gamma rays doses, viz., 100, 20CL 300 and 400 Gy with 0.2% EMS during summer, 2001 at research farm, Institute of Agricultural Sciences, BHU, Varanasi. Five different unique seed and pod colour mutants, namely, MUB-2 with brown pods and yellow shining seed (IC 557431); MUB-3 with brown pods and black shining seed (IC 557432); MUB-4 with black pods and yellow shining seeds (IC 557433); MUB-5 with black pods and yellow rough seed (IC 557434) and MUB-6 with black pods and black shining seeds (IC 557435) have been conserved in National Gene Bank, NBPG, New Delhi. These mutants with brown/black colour pods with either black/ yellow shining/yellow seeds were isolated in M2 generation from the different individual and combination treatments of gamma rays and EMS. The identified mutants were evaluated during two consecutive years in the field conditions alongwith parent. Unique combinations of seed colour along with the pod colour have been observed in these mutants. Mutants MUB-2 (brown pods with black shining seed IC 557431) and MUB-3 (brown pods with black shining seed IC 557432) exhibited high yield and are likely to have farmers and consumer preference. Out of the 5 mutant, only MUB-4 (INGR No. 09034) has been registered in NBPG, while remaining mutants are being maintained as indigenous collections. These mutants showed lower infestation percentage of CLS and MYMV diseases in comparison to the parent PU-30. The mutants described above can be used as a variety or breeding line directly and indirectly for improvement of blackgram with respect to yield and seed shining. Also these mutants could be used in genetic and molecular studies of the mutant trait(s).

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